5.16.25 SAMPLING AND SPLITTING PLANT MIXED ASPHALT MIXTURES
(Kansas Test Method KT-25)

a. SCOPE

This method covers the procedure for sampling plant mixed asphalt mixtures from truck beds, continuous mix plants, and roadways. The procedure for sampling from trucks may be followed when sampling asphalt mixtures from other containers or in stockpiles. KT-25 reflects testing procedures found in AASHTO T 168.

b. REFERENCED DOCUMENTS

b.1. AASHTO T 168; Sampling Asphalt Paving Mixtures

c. APPARATUS

c.1. Square pointed shovel or scoop.

c.2. Sampling Devices.

c.2.a. Plants shall be equipped with sampling devices capable of providing a sample of sufficient size from the full width of the mixer discharge flow. Sampling devices shall be designed so those samples may be taken while the plant is operating at normal production rates.

c.2.b. A container that will hold a minimum of 55 lb (25 kg) of loose, hot asphalt mixture. The container should be equipped with a handle or handles that will permit it to be easily carried.

d. SAMPLING PROCEDURE

d.1. Plant Discharge.

d.1.a. Drum plants shall be capable of sampling at the discharge outlet. When a sample is taken at the discharge, the sampling container shall be of sufficient size to accommodate the entire stream uniformly. If a by-pass chute is utilized, a representative sample shall be obtained.

d.1.b. Take the sample in at least three increments to obtain the total sample. Combine the increments and mix thoroughly.

d.2.c. The combined sample size shall be at least four times the amount required for testing.

d.2. Truck Beds.

d.2.a. Divide the truck bed into at least three areas of approximately equal size.

d.2.b. Dig a hole about 1 ft (0.3 m) deep at a point that will be representative of each area.

d.2.c. Take a sample weighing 4 to 6 lb (2 to 3 kg) near the bottom of each hole, taking care to prevent segregation.

d.2.d. Combine the individual samples into a single sample and mix thoroughly.

d.2.e. The combined sample size shall be at least four times the amount required for testing.

d.3. Roadways Prior to Compaction.

d.3.a. Randomly obtain at least three approximately equal increments from the roadway within the randomly selected truckload. These increments shall be the full depth of the lift, full width of the laydown machine minus 0.6 m (ignore 0.3 m on both edges of the laydown machine) and shall be selected at random. **Remember to add 0.3 m to the centerline measurement of the random calculated width.** See **d.3.d.** EXAMPLE for clarification.

d.3.b. The template shall be inserted through the full depth of the lift and all of the loose material removed from the template. Combine the increments and mix thoroughly.

NOTE: An approximate 12 in (300 mm) square template can be used to obtain the sample. Size and shape of the template can be altered to best fit the required sampling quantity without segregating the material. Take the number of squares required to obtain the necessary quantity for testing.

d.3.c. The sample size shall be at least four times the amount required for testing. For Superpave projects, the minimum sample size is shown in the specifications.

d.3.d. EXAMPLE

d.3.d.1. Estimate the length a truckload of mix will produce based on size of truck and placement dimensions. This will be used to establish the distance required for the three equally spaced sublots of the truckload, now located on the roadway. Also, establish three sets of random numbers for each expected set of tests. The random numbers will determine the exact locations within each sublot area to pull the samples.

d.3.d.1.a. For this example, the truck load covers approximately 30 m, width of paving is 3.65 m, and the following numbers were determined from 5.17.06-5 (Table 2, set 7: lines 9,10,11) for the random locations: 1st sublot (.712, .061); 2nd sublot (.855, .671); 3rd sublot (.958, .067).

d.3.d.1.b. Calculated out, the 3 sublot locations are as follows:

	X	Y	Longitudinal	Transverse
1st sublot:	.712	.061	7.1 m	0.5 m
2nd sublot:	.855	.671	18.6 m	2.3 m
3rd sublot:	.958	.067	29.6 m	0.5 m

Longitudinal direction is calculated by multiplying the "X" value with the length of the sublot (10 m) and rounded to the nearest 0.1 m.

1st Sublot Longitudinal: 0 m + (0.712 X 10 m) = 7.12 m = 7.1 m
2nd Sublot Longitudinal: 10 m + (0.855 X 10 m) = 18.55 m = 18.6 m
3rd Sublot Longitudinal: 20 m + (0.958 X 10 m) = 29.58 m = 29.6 m

Tranverse direction is calculated by multiplying the "Y" value with the corrected laydown width (3.65 – 0.6 = 3.05 m). Then add the 0.3 m offset from centerline to the width that has been multiplied with the random number and round to the nearest 0.1 m.

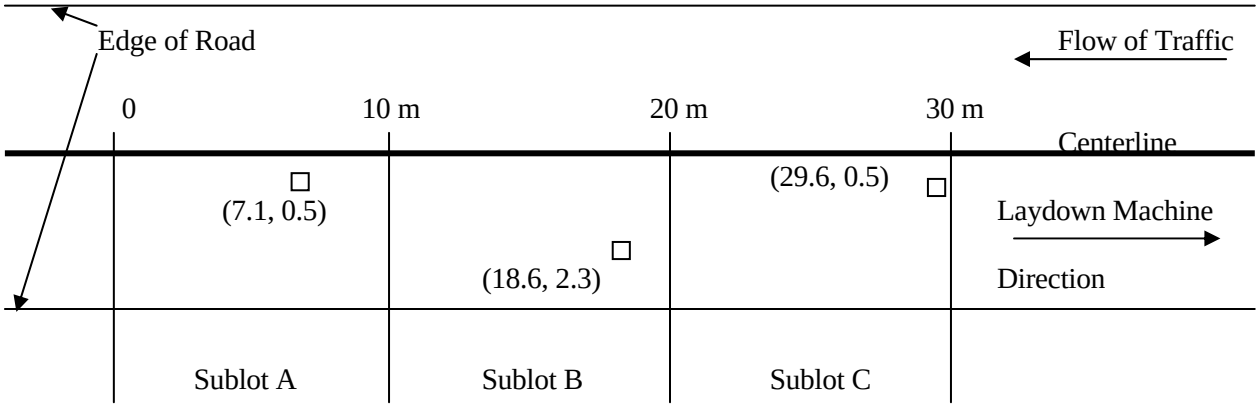
1st Sublot Transverse: 0.3 m + (0.061 X 3.05 m) = 0.486 m = 0.5 m
2nd Sublot Transverse: 0.3 m + (0.671 X 3.05 m) = 2.347 m = 2.3 m
3rd Sublot Transverse: 0.3 m + (0.067 X 3.05 m) = 0.504 m = 0.5 m

d.3.d.2. Random numbers determined that the next series of tests fall at 375 Mg (375 tons). When the material representing 375 Mg falls from the storage bin and into the truck, follow the truck to the roadway and estimate where the truckload will begin behind the laydown machine. Mark this as the zero point of the truckload. If the paver stops for each truckload, then the back of the paver is considered as the zero point.

d.3.d.3. As soon as the locations are paved and prior to compaction, mark the three random locations based on the random numbers determined in **d.3.d.1**.

d.3.d.4. Place the template on each sample location and extract all material.

DRAWING FOR **d.3.d.** EXAMPLE



e. SAMPLE SPLITTING AND REHEATING

e.1. Reduce sample to the required size by splitting or quartering in the following manner:

e.1.a. Spread a sheet of paper (Kraft or similar) on a hard, clean, smooth and level surface. Place the sample in a pile near the center of the paper and mix by alternately lifting each corner towards the opposite corner thereby rolling the mixture to the opposite corner. This should be performed in a vigorous manner. Placing the sample on clean sheet metal and mixing thoroughly with a trowel is an acceptable alternative.

e.1.b. Divide the pile into four equal quarters with a straightedge (trowel or similar metal blade) and completely remove two pre-selected diagonally opposite quarters.

e.1.c. Continue this quartering procedure until the original sample is reduced to the approximately desired size. On the final quartering step, if the sample is too large before quartering, but will be too small after quartering, the sample pile is divided into equal opposite sectors but unequal adjacent sectors. This can be accomplished by varying the dividing angle at the center of the sample pile from the normal 90 degrees. Opposite sections can then be selected to obtain the desired sample size.

e.2. After mixing and reducing, samples may be reheated briefly, if necessary, to bring to specified compaction temperature. Care must be exercised to avoid overheating any part of the sample. Insulated containers are recommended for transporting and storing samples until used.